

II. REMARKS

United States Serial No. 10/524,466, was filed on November 14, 2005. In view of the remarks set forth herein, Applicants respectfully request reconsideration and allowance of claims 1-18.

35 U.S.C. §112, First Paragraph - New Matter

Claims 6-18 have been rejected under the first paragraph of 35 U.S.C. §112, as being new matter. It is specifically alleged that newly added claims 6-18 are not supported by the original disclosure.

Applicants respectfully traverse this rejection. Claims 6, 7, 15, and 16 are expressly supported in the originally filed disclosure at Page 6, Lines 13-14 ("The polymers for use in this invention preferably have a weight-average molecular weight of from 5,000-50,000, preferably from 10,000-40,000.").

The claimed ranges for the proportion of solids recited in claims 8 and 17 are expressly supported at Page 6, Line 29 - Page 7, Line 7 of the originally filed disclosure. (See Table for ranges of solids of components 1, 2 and 3).

Claims 9 and 18 are expressly supported at Page 7, Lines 14-15 ("The admixture is added to a cementitious mixture at a rate of from 0.2-2.0%, preferably from 0.5-0.8% by weight solids on cement.").

Applicants respectfully submit that the use of the transition "comprising" in independent claim 10 does not introduce new matter. The originally filed description expressly discloses that additional ingredients may be included in the fluidizing admixture, in addition to the tricarboxylic acid and copolymer. See Page 7, Lines 17-19, disclosing that "the admixture according to this invention may be used in conjunction with all the conventional admixtures used in the spraying of cementitious compositions...."

Independent claim 10 is further expressly supported at Page 6, Lines 16-20 by the incorporation of International Application WO 00/77058. ("Typical examples of preferred polymers may be prepared by the reaction of methoxypolyethyleneglycol-monovinyl ether, maleic anhydride, amine-terminated ethylene oxide-propylene oxide block copolymer and acrylic acid. Examples of these materials and their preparation may be found in International Application WO 00/77058 the contents of which are incorporated herein by reference.").

WO 00/77058 specifically discloses copolymers "based on radicals of unsaturated monocarboxylic or dicarboxylic acid derivatives and oxyalkylene glycol alkenyl ethers, which are characterized in that they comprise

(a) from 51 to 95 mol % of structural units of the formula Ia and/or Ib and/or Ic...

(b) from 1 to 48.9 mol % of structural units of the general formula II...

(c) from 0.1 to 5 mol % of structural units of the formula IIIa or IIIb...

(d) from 0 to 47.9 mol [lacuna] of structural units of the general formula IVa and/or IVb..." See WO 00/77058 at Page 4, Line 15 – Page 7, Line 16.

The present application has been amended to include subject matter disclosed in WO 00/77058. The subject matter being inserted is the disclosure originally incorporated by reference, and does not contain any new matter. Applicants submit that the amendment is proper and filed in accordance with 37 CFR §1.57. An English language translation of WO 00/77058 is submitted herewith. The English language translation was obtained from the image file wrapper of USPN 6,777,517 (the national phase filing of WO 00/77058).

Claims 11-14 ultimately depend from claim 10, which does not contain new matter. Therefore, claims 11-14 are also fully supported by the originally filed disclosure.

In view of the above remarks, Applicants respectfully request withdrawal of the 35 U.S.C. §112, first paragraph new matter rejections.

35 U.S.C. §112, First Paragraph - Enablement

Claims 1-18 have been rejected under 35 U.S.C. §112, first paragraph as allegedly failing to comply with the enablement requirement. It is specifically alleged that the claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to make and/or use the invention. The Office Action further specifically alleges that the specification would appear to only enable Applicants' invention to one specific polymer (MVA 2453 L/44% ex Degussa).

Applicants respectfully traverse this rejection. "The presence of only one working example **should never** be the sole reason for rejecting claims as being broader than the enabling disclosure... To make a valid rejection, one must evaluate all the facts and evidence and state why one would not expect to be able to extrapolate that one example across the entire scope of the claims." MPEP §2164.02. [Emphasis Added].

As long as the specification discloses at least one method for making and using the claimed invention that bears a reasonable correlation to the entire scope of the claim, then the enablement requirement of 35 U.S.C. §112 is satisfied. *In re Fisher*, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970); MPEP §2164.01(b). Failure to disclose other methods by which the claimed invention may be made does not render a claim invalid under 35 U.S.C. §112. *Spectra – Physics, Inc. v. Coherent, Inc.*, 827 F.2d 1524, 3 USPQ 2d 1737, 1743 (Fed. Cir.), cert. denied, 484 U.S. 954 (1987).

Claims 1 and 10 recite "at least one polymer derived from ethylenically – unsaturated mono- or dicarboxylic acids, and characterized in that the polymer..." Applicants disclosed a working example utilizing MVA 2453 L/44% ex Degussa as the copolymer component of the admixture. This copolymer falls within the scope of independent claims 1 and 10. As such, the working example clearly bears a reasonable correlation to the entire scope of the claim, and one skilled in the art would be capable of making or using the invention, by selecting other disclosed copolymers

based on unsaturated or mono- or dicarboxylic acid derivatives and oxyalkylene glycol alkenyl ethers.

Furthermore, the Office Action sets forth no reasons why one skilled in the art would not expect to be able to extrapolate the working example (MVA 2453 L/44%) across the entire scope of the claims, as specifically required by MPEP §2164.04.

A specification disclosure which contains a teaching of the manner and process of making and using an invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented must be taken as being in compliance with the enablement requirement of 35 U.S.C. §112, first paragraph, unless there is a reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support. *In re Marzocchi*, 439 F.2d 220, 224, 169 USPQ 367, 370 (CCPA 1971).

As stated by the Court in *Marzocchi*, "it is incumbent upon the Patent Office, whenever a rejection on this basis [enablement] is made, to explain why it doubts the truth or accuracy of any statement in a supporting disclosure and to back up assertions of its own with acceptable evidence or reasoning which is inconsistent with the contested statement." *In re Marzocchi*, 439 F.2d at 224, 169 USPQ at 370. This is done by making specific findings of fact, supported by the evidence, and then drawing conclusions based on these findings of fact. MPEP §2164.04.

The Office Action sets forth no specific technical reasons why one would not expect to be able to extrapolate the example across the entire scope of claims 1 and 10, makes no specific findings of fact, and does not indicate why it doubts the truth or accuracy of the disclosure. In view of the above remarks, Applicants respectfully request that the enablement rejection under 35 U.S.C. §112, first paragraph, be withdrawn.

35 U.S.C. §112, Second Paragraph

Claims 1-18 have been rejected under 35 U.S.C. §112, second paragraph, as failing to set forth the subject matter which Applicants regard as their invention. It is specifically alleged that independent claims 1 and 10 are indefinite because it is not clear whether each of structures A, B, C and D are required.

Applicants respectfully traverse this rejection. Claims 1 and 10 recite, in part, the following:

- a) 51-95 mol % of moieties of Formula Ia and/or Ib and/or Ic.
- b) 1-48.9 mol % of moieties of the General Formula II.
- c) 0.1-5 mol % of moieties of Formula IIIa or IIIb.
- d) 0-47.9 mol % of moieties of the General Formula IVa and/or IVb.

As structure D may be zero, it is merely an optional component and not required. Applicants submit that the claim language is clear and unambiguous and, when reading the claims in light of the specification, one having ordinary skill in the art would easily understand that at least one of Ia or Ib or Ic, and at least one of II, and at least one of IIIa or IIIb are required, and that structure D is merely optional. Applicants, therefore, respectfully request that this rejection be withdrawn.

As requested by the Examiner, Applicants have enclosed data sheets for the DEGUSSA and GLENIUM materials.

35 U.S.C. §103 Rejection

Claims 1-18 have been rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 5,567,236 ("Schapira"), or 3,964,921 ("Persinski '921"), or 4,040,854 ("Persinski '854") alone or in view of U.S. Patent No. 5,369,198 ("Albrecht") and WO 00/77058 A1 ("Albrecht"). Applicants respectfully traverse these rejections.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. MPEP §2143.

Schapira

It is specifically alleged that Schapira teaches the addition of (1) citric acid and (2) 2-phosphonobutane-1,2,4 tricarboxylic acid as stabilizing agents, and (3) the addition of a superplasticizer. The Office Action alleges that the use of another known polymer that functions to improve the flowability and dispersibility of cement would have been an obvious design choice for one of ordinary skill in the art because they are functionally equivalent.

In order to rely on equivalence as a rationale supporting an obviousness rejection, the equivalency must be recognized in the prior art, and cannot be based on Applicants disclosure or the mere fact that the components at issue are functional or mechanical equivalents. *In re Ruff*, 256 F.2d 590, 118 USPQ 340 (CCPA 1958). “Actual equivalence is not enough to justify refusal of a patent on one member of a group when another member is in the prior art. The equivalence must be disclosed in the prior art or be obvious within the terms of Section 103.” *In re Ruff*, 256 F.2d 590 at 599.

There is no disclosure in Schapira of the copolymer of the present application. That is, Schapira does not disclose, suggest or provide motivation for a copolymer based on unsaturated mono- or dicarboxylic acid derivatives and oxyalkylene glycol alkenyl ethers. Therefore, there is no disclosure in Schapira that the copolymer is equivalent to the superplasticizers taught in Schapira. The copolymer would not be an obvious design choice for one of ordinary skill in the art, as Schapira discloses that the use of different superplastizers may result in inferior results, as compared to other superplasticizers.

Schapira teaches that the synergetic effect of a ternary mixture (made up of a superplasticizing agent, a stabilizing agent capable of forming a chelate with the calcium ions of the cement-based product and a polycarboxylic polymer dispersing agent) with respect to slump loss is beyond comparison with the results which can be obtained by any binary combination of the three constituents. Schapira, Column 2, Lines 59 - 67. It allegedly does so without unfavorably influencing the mechanical strength. Schapira, Column 3, Lines 1- 7.

Schapira alleges that the composition satisfies the AFNOR standard 18 333 which relates to superplasticizing adjuvants and which requires, on the part of a superplasticizer, a compressive strength at 24 hours greater than or equal to 85% of that of a control that is free of superplasticizer for the same water/cement ratio. Schapira, Column 10, Lines 47 – 53.

Example 4 of Schapira analyzed the influence of different superplasticizing agents in combination with a polycarboxylic polymer dispersing agent and a chelating stabilizing agent. Column 15, Line 34 - Column 16, Line 35. Table V of Schapira displays the workability and compressive strengths of the compositions after two hours. See Table at Top of Columns 17-18.

Schapira states that “the best results are obtained with superplasticizing agents of PNS and SCM types, which are preferred. The superplasticizing agents of LNS and PSS AM types cause a setting-retarding effect which exerts a negative effect on the compressive strengths at the young age; these agents are less advantageous.” Column 17, lines 26-32. These compositions (8, 9 and 10), and even an SCM type (6), did not perform as well (either as a result of slump loss or compressive strength) as the other compositions containing different superplasticizers. See Example 4, Table V, Columns 17 – 18, Tests 1 – 5, 7. As a matter of fact, Tests 9 and 10 failed to satisfy the AFNOR standards (68% and 66%, respectively).

Additionally, those compositions (6, 8, 9 and 10) failed to perform as well, with respect to slump loss, as binary compositions. See Example 5, Column 17, Line 37 – Column 19, line 13, Tests 2, 4, 6 and 11.

Even within the Schapira reference, there is a dispute as to the equivalency of the disclosed superplasticizers. It clearly shows that out of 10 different superplasticizers, only six gave satisfactory results. Therefore, it would not be obvious to one of ordinary skill in the art to simply substitute the copolymer of the present application. In view of the above remarks, Applicants submit that claims 1-18 are not rendered obvious by Schapira, and request that the rejection under 35 U.S.C. 103 be withdrawn.

Persinski ('854, '921)

Claims 1-18 are rejected under 35 U.S.C §103(a) as being unpatentable over Persinski ('854 or '921). It is specifically alleged that claim 3 of Persinski ('854 or '921) teaches the addition of 2-phosphonobutane-1,2,4 tricarboxylic acid as a flow improving and turbulence inducing additive. Applicants traverse this rejection.

Persinski '854 merely teaches that the "hydraulic cement may be employed alone in preparing the cementing composition, merely being admixed with water and the flow-property-improving and turbulence-inducing additive, or it may have additionally incorporated there any of a number of conventional cement additives." Persinski '854, Column 5, lines 55 – 60. Examples of these agents include retarders, fluid-loss control agents, weighting components and other conventional additives. Persinski '854, Column 5, Line 60 – Column 6, Line 17. Persinski '921 provides the identical disclosure. Persinski '921, Column 5, Lines 16-46.

There is no teaching, suggestion, or motivation in Persinski ('854 or '921) to combine 2-phosphonobutane-1,2,4 tricarboxylic with either citric acid or the copolymer claimed in the present application. In view of the above remarks, Applicants submit that claims 1-18 are not rendered obvious by Persinski ('854 or

'921). Therefore, Applicants respectfully request that the rejection under 35 U.S.C. §103 be withdrawn.

Schapira or Persinski in view of Albrecht

It is alleged that claims 1-18 are obvious in view of U.S. Patent No. 5,567,236 ("Schapira"), or 3,964,921 ("Persinski '921"), or 4,040,854 ("Persinski '854") in view of U.S. Patent No. 5,369,198 ("Albrecht '198") and WO 00/77058.

It is specifically alleged that the claimed polymer is within the teachings of '198 and WO 00/77058, and that it would have been an obvious design choice for one of ordinary skill in the art to combine two known dispersing or flow improving additives to cement, because both are known for the same function of dispersing or flow improvability.

Applicants respectfully traverse this rejection. There is no teaching, suggestion or motivation to make the claimed combination. "A statement that modifications of the prior art to meet the claimed invention would have been 'well within the ordinary skill of the art at the time the claimed invention was made' because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references." *Ex parte Levengood*, 28 SUPQ2d 1300 (BPAI 1993).

Furthermore, the "teaching or suggestion to make the claim combination and the reasonable expectation of success must both be found in the prior art, not in Applicants' disclosure." *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Moreover, "the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

In re Geiger, 815 F.2d 686, 687, (Fed. Cir. 1987) illustrates this. In *In re Geiger*, an application was directed to a method of inhibiting scale formation on and corrosion of metallic parts in cooling water systems by use of compositions containing (1) a sulfonated styrene/maleic anhydride (SSMA) co-polymer, (2) a water soluble zinc compound, and (3) an organo-phosphorus acid compound or water soluble salt thereof. *In re Geiger*, 815 F.2d 686, 687 (Fed. Cir. 1987).

The application was initially rejected by the Examiner under 35 U.S.C. §103, finding that the claimed subject matter would have been obvious in view of various combinations of references, with reliance upon U.S. Patent No. 4,209,398 (Ii), U.S. Patent No. 4,374,733 (Snyder) and U.S. Patent No. 4,255,259 (Hwa). Id.

“Ii” disclosed a system for the same purpose that could include (1) a copolymer, (2) a water soluble zinc compound, and (3) an organo-phosphorus acid compound. Id. However, there was no teaching of SSMA in “Ii.” Id.

“Snyder” disclosed a method for treating cooling water systems prone to scale formation which could include SSMA or a styrene/maleic anhydride (SMA) copolymer. Id.

“Hwa” was directed to a method for treating boiler water systems that were prone to scale formation by addition of a composition comprised of SSMA and an organo-phosphorus acid compound. Id.

Based on the prior art and the fact that each of the three components of the composition used in the claimed method were conventionally employed for treating cooling water systems, the Board of Patent Appeals and Interferences held it would have been obvious to employ these components in combination for their known functions and to optimize the amount of each additive. Id.

The Applicants argued that the PTO's position represented hindsight reconstruction, or, at best, established that it would have been "obvious to try" various

combinations of known scale and corrosion prevention agents, including the combination recited in the appealed claims. Id. at 688.

The Federal Circuit agreed with the Applicants. Id. The court noted that “Ii” did not suggest the use of SSMA and that although “Snyder” disclosed the use of SSMA, it was for the purpose of showing that it, or one of three other specifically recited copolymers, could be used in combination with yet another polymeric component to prevent scale formation. Id. Finally, “Hwa” provided no suggestion to add a zinc compound to its combination of SSMA and organo-phosphorus acid compounds. Id. Additionally, “Hwa” provided no suggestion that SSMA could be used in cooling water in the manner ascribed to the polymeric component in Ii. Id.

The Federal Circuit stated that, “at best, in view of these disclosures, one skilled in the art might find it obvious to try various combinations of these known scale and corrosion prevention agents. However, this is not the standard of 35 U.S.C. § 103.” Id. “Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination.” Id. The court reversed on the basis of failure to establish a *prima facie* case of obviousness. Id.

Here, it is alleged that Schapira teaches the addition of (1) citric acid and (2) 2-phosphonobutane-1,2,4 tricarboxylic acid as stabilizing agents, and (3) the addition of a superplasticizer. However, there was no teaching of the copolymer of the present application in Schapira.

Similarly, there is no teaching or suggestion in Persinski (‘854 or ‘921) to combine 2-phosphonobutane-1,2,4 tricarboxylic and/or citric acid with the copolymer of the present application.

Finally, neither Albrecht ‘198 nor WO 00/77058 teaches, suggests or motivates the combination of the copolymer with 2-phosphonobutane-1,2,4 tricarboxylic and/or citric acid. Neither Albrecht ‘198 nor WO 00/77058 teaches, suggests or motivates the substitution of the copolymer of the present application in

the compositions of Schapira or Persinski. As a result, the Office Action is utilizing an improper 'obvious to try' rationale in support of an obviousness rejection. See MPEP §2145.

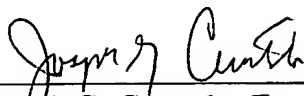
As detailed above, it would not be obvious to one of ordinary skill in the art to substitute the copolymer of either Albrecht '198 or WO 00/77058 for the claimed superplasticizers of Schapira. The test results of Schapira indicate that the use of different superplasticizers may produce unacceptable results.

Accordingly, the proposed combination does not render claims 1-18 obvious. Therefore, Applicants respectfully request that the rejection under 35 U.S.C. §103 be withdrawn.

In view of the above remarks, Applicants respectfully request the 35 U.S.C. §§ 112 and 103 rejections be withdrawn, and that the Examiner issue a formal notice of allowability directed to claims 1-18.

Should the Examiner have any questions regarding the remarks set forth herein, Applicants' undersigned attorney would welcome a telephone call.

Respectfully submitted,



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